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WHAT IS CLAIMED IS:

1. A method of measuring glucose levels in blood of a living being having an eye comprising a cornea and a lens, which together form an anterior chamber, said eye further comprising an iris and aqueous humor in said anterior chamber, said aqueous humor having an index of refraction correlated to said glucose level in said blood, said method comprising:

propagating two substantially coherent beams of light through said cornea to illuminate a region of said iris, said two substantially coherent beams of light propagating through said aqueous humor to reach said iris;

overlapping said two beams on said region of said iris, said two beams being sufficiently coherent so as to produce an interference pattern in said region of said iris, said interference pattern comprising a plurality of fringes having a spatial arrangement that depends on said index of refraction of said aqueous humor;

imaging said interference pattern onto a light sensitive optical detector; and

determining said glucose level in said blood from said spatial arrangement of said fringes in said interference pattern.

2. The method of Claim 1, wherein said glucose level is determined at least in part by identifying the locations of extrema in said spatial arrangement of said fringes.

3. The method of Claim 1, wherein said glucose level is determined at least in part from the fringe spacing.

4. The method of Claim 1, wherein said glucose level is determined at least in part by fitting at least a cross-sectional profile of said fringe pattern to a curve.

5. The method of Claim 1, wherein said glucose level is determined at least in part by matching a profile of said fringe patterns to known profiles in a look-up table.

6. An apparatus for monitoring glucose fluctuations by measuring properties of an eye:

a light source which emits a beam of light;

an optical element situated to receive said beam of light from said light source and to split said beam of light into first and second probe beams that propagate along respective first and second optical paths;

at least one optical element in one of said optical paths to alter said optical path such that first and second probe beams intersect at a target plane; and

an optical detector and imaging optics for imaging said target plane on said optical detector.

7. The apparatus of Claim 6, wherein said light source comprises a laser.

8. The apparatus of Claim 6, wherein said optical element situated to receive said beam of light from said light source comprises a beamsplitter.

9. The apparatus of Claim 6, wherein said at least one optical element that alters said optical path such that said first and second probe beams intersects comprises a mirror.

10. The apparatus of Claim 6, wherein said imaging optics includes a lens.

11. The apparatus of Claim 6, further comprising focusing optics in said second optical path that transforms said second optical beam into a converging beam.

12. The apparatus of Claim 11, wherein said eye includes a cornea having a curved outer surface defined by a center of curvature and said focusing optics is configured and situated to transform said second optical beam into a converging beam comprising wavefronts having a center of curvature substantially coincident with the center of curvature of said outer surface of said cornea.

13. The apparatus of Claim 6, wherein said optical detector and said imaging optics are arranged together with said target plane to satisfy the Scheimpflug condition.

14. The apparatus of Claim 6, further comprising an alignment system for aligning said first and second probe beams with said eye, said alignment system including an optical sensor having an electronic output indicative the state of alignment.

15. The apparatus of Claim 14, further comprising electronics electrically coupled to (i) said electronic output of said optical sensor included in said alignment system and to (ii) said optical detector that images said target plane, said electronics configured to cause said optical detector to capture an image of said target plane based on said state of alignment.

16. A method of monitoring glucose levels in blood of a living being having an eye, said method comprising:

propagating light through a portion of said eye comprising aqueous humor having an index of refraction that varies with glucose concentration;

obtaining phase information associated with said light through optical interference, said phase information depending at least in part on said index of refraction of said aqueous humor; and

using said phase information to determine said glucose levels in said blood.

17. The method of Claim 16, wherein said step of obtaining phase information comprises analyzing interference fringes.

18. The method of Claim 16, further comprising correlating said phase information with at least one independently measured glucose level of said living being to provide calibration.

19. An alignment apparatus for lateral aligning an eye with respect to said apparatus comprising:

a central light source;

a partially reflecting concave mirror having an optical axis passing therethrough, said central light source centrally disposed along said optical axis such that at least a portion of said light from said central light source propagates through said partially reflecting concave mirror along said optical axis;

first and second offset light sources disposed in a plane passing through said optical axis, said first and second offset light sources on opposite sides of said optical axis, said first and second offset light sources emitting light at an oblique angle toward said optical axis.

20. The alignment apparatus of Claim 19, wherein said central light source comprises a light emitting diode.

21. The alignment apparatus of Claim 19, wherein said partially reflecting concave mirror comprises a metalized mirror.

22. The alignment apparatus of Claim 19, wherein said first and second offset light sources comprise light emitting diodes.

23. The alignment apparatus of Claim 19, wherein said first and second offset light sources are spaced apart from said optical axis by equal distances.

24. The alignment apparatus of Claim 19, wherein said first and second offset light source have respective positions and orientations such that said light emitted from said light sources is substantially directed toward a common point on said optical axis.

25. A method of aligning a device with respect to a cornea, said cornea having a substantially spherical curvature defined by a center of curvature, said method comprising:

propagating light toward said cornea, said light having substantially spherical wavefronts defined by a center of curvature that is substantially coincident with said center of curvature of said cornea;

retroreflecting a portion of said light from said cornea;

collecting said retroreflected light; and

focusing said collected light on an optical detector having a photosensitive area such that when said center of curvature of said wavefronts is substantially coincident with said center of curvature of said eye, said light focused on said photosensitive area has a different intensity than when said respective centers of curvature are non-coincident.

26. The method of Claim 25, further comprising covering at least a portion of said optical detector such that when said center of curvature of said wavefronts is non-coincident with said center of curvature of said eye, said light incident on said photosensitive area is reduced.